TOWARD A CANADIAN STRATEGY

FOR INTERNATIONAL SOFT

INFRASTRUCTURE DEVELOPMENT

Prepared by

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1.0 INTRODUCTION

1.1 Purpose

The purpose of this paper is to provide an overview of the opportunities and challenges associated with the development of international "soft" infrastructure markets to Trade Team Canada Service Industries and Capital Projects (TTCSICP) members, and to seek their input on how to help secure increased business opportunities for Canadian suppliers.

1.2 A Working Definition

While "hard" infrastructure refers to capital-intensive, tangible elements of an economy such as roads, highways, airports, hospitals, schools, dams and power stations, ports, sewer and water networks, transmission towers etc., no clear definition has yet been offered to capture the realm of activities which constitute "soft" infrastructure. The term is coming into use in reference to "**capacity building and knowledge transfer activities manifest in the areas of institution building and socio-economic and industrial support systems, such as government institutions and governance processes, legal institutions and frameworks, training, health systems, R&D, design and human resource development**". It is strikingly evident that knowledge and its management is at the very essence of soft infrastructure.

Sigma VI's President, David Gray, in a paper delivered to Industry Canada's November 1997 Forum on International Business Partnering, provided further context to the above definition when he identifies "capacity development" projects as those which target performance at a sectoral level and involve:

- the policy, legislative and regulatory environments;
- the strengthening, reorganization or creation of key organizations;
- the development of human resources required to manage new systems;
- a shift from public to private sector management and new financing structures; and
- environmental and gender strategies.

1.3 Issue

Soft infrastructure allows economies to grow and flourish. If the basic institutions, frameworks and skills are not in place, conducting business or implementing and maintaining hard infrastructure becomes difficult if not impossible to do successfully. A recent scan of soft infrastructure development conducted for Industry Canada by TCI Convergence Limited indicates increasing activity and a growing international market demand, particularly among the world's emerging and under-developed economies, for the development of effective organizational and institutional infrastructure, improved methods and skilled human resources to spur economic growth. Extrapolating World Bank and OECD figures, TCI estimates that soft infrastructure activity amounts to some $10 billion annually. The issue, simply put, becomes:

How can Canada maximize its contributions to "capacity building" in these countries, thereby seizing upon current business opportunities, while at the same time establishing the mechanisms which will provide the basis for future international business opportunities?

2.0 SOFT INFRASTRUCTURE AND THE KNOWLEDGE-BASED ECONOMY

Kevin Lynch, Industry Canada's Deputy Minister, has stated that "the main challenges and opportunities, shared by all leading industrial countries are productivity growth, the innovation gap, the human resources gap, the trade gap and the global investment gap." Since knowledge is the core requirement to be addressed in overcoming these gaps, a major thrust of the Department's response is "to make Canadians the most connected people in the world" to position Canada to better compete in the knowledge-based economy of the 21st century. The Deputy Minister's message is that the comparative advantage which Canadian firms currently enjoy will be constantly challenged by the resolve of Canadians to be globally-oriented, highly productive and prepared to invest heavily in knowledge and skills.

In its **World Development Report 1998/99: Knowledge for Development**, the World Bank examines the relationship between knowledge and development and states that the "twin issues of knowledge gaps and information problems" mark the difference between industrial and developing economies. Moreover, the report speaks to the reduction or narrowing of the developing economy's "knowledge gaps" through the acquisition, absorption and communication of knowledge. The report goes on to state that "our growing understanding of information constraints suggests that markets alone are not adequate; societies also require institutions to facilitate the acquisition, adaptation and dissemination of knowledge, and to mitigate information failures, especially as they affect the poor". Of equal importance, is the salient observation in the report that in developing countries, the capacity to create or bundle knowledge poses an even greater gap than the knowledge gap itself. In fact, the report finds that inequalities in the capacity to create or bundle knowledge exceed even those inequalities in income between

rich and poor economies.

In short, there are a growing number of studies and reports clearly pointing to knowledge and its application as the major driving force in economic growth and social well-being. As a result, there is significant global demand for knowledge management and capacity-building expertise as expressed in this paper's working definition of soft infrastructure, especially from the emerging economies where these needs are particularly acute, where the knowledge gaps are wide, and where the capacity to narrow such gaps remains weak.

Canadian firms, and in particular Canadian SMEs are in a unique position to respond to the soft infrastructure needs of these emerging economies.

3.0 CANADIAN COMPARATIVE ADVANTAGE IN SOFT INFRASTRUCTURE

At the Industry Canada organized Public-Private Infrastructure (PPI) Conference in the fall of 1998, a communications infrastructure workshop featured a presentation by James Mackie, Vice-President, Strategic Marketing for Newbridge Networks Corporation. Mr. Mackie examined opportunities in soft infrastructure beyond the capital-intensive hard infrastructure projects currently being pursued by companies from a multitude of countries. In his view, Canadian firms should be more vigorously pursuing soft infrastructure opportunities. For example:

- Canada should be selling its knowledge in maintenance database GIS, not just building roads;
- Canada should be marketing its capabilities in the areas of structural design and performance measurement in addition to building bridges;
- Canadians should be exploiting opportunities in process control in the waste treatment field;
- Canada has expertise and knowledge in harnessing power from small rivers and in the field of grid management, with respect to power project development;
- Canada's knowledge is unsurpassed in the area of air traffic control in the field of airport development; and
- Canadians can offer expertise in tokens and route optimization systems with respect to transit line development.

The aforementioned World Bank report points to the need in education and labour markets for accreditation and skills certification which will allow prospective employers to hire skilled workers. The financial sector is particularly prone to information problems and there is a need for accounting and auditing standards which make it possible for investors to compare information across firms.

Canadian applied knowledge in the field of geomatics is world class and our sharing of such knowledge and expertise with emerging economies assists them to establish the fundamental building blocks of land tenure, property studies and natural resource management, as well as the basis for environmental project management. GeoCan International has been formed from within the Geomatics Industry Association of Canada (GIAC) to exploit opportunities for geomatics applications in international markets, particularly within emerging economies in Latin America.

Since 1979, the Association of Canadian Community Colleges (ACCC) has implemented and managed more than 300 development projects in more than 70 countries. For example, the ACCC in 1993 acted as the training agent in Northern Telecom's bid to supply equipment and operating systems to Groupo Iusasell, a young cellular company in Mexico City. As part of the bid, the ACCC developed a training plan with Iusasell staff to support the systems acquisition from Nortel. The plan included both short-term upgrading of existing staff and training for the long-term supply of technical and professional workers. Northern Telecom won the US $700 million contract. The project's six training elements, worth $2.6 million, have been delivered by Canadian colleges, Northern Telecom, a university and a private sector interactive training technology firm.

4.0 THE ROLE OF SOFT INFRASTRUCTURE

There are two dimensions to soft infrastructure development:

(1) discrete, stand alone soft infrastructure project development; and

(2) soft infrastructure projects which link soft and hard infrastructure together.

With respect to the pursuit of soft infrastructure project potential in its own right, "capacity building" and "knowledge management" are viewed as key capabilities in need of development and support within emerging and transitional economies. Exploiting these opportunities will generally involve dealing with projects of the International Financial Institutions (IFI), since the strategic thinking of international business development agencies is moving more and more in this direction. By way of example, the growth of projects financed by the Inter-American Development Bank (IADB), related to judicial reform, education, credit and pre-investment, as well as micro-enterprise development, is notable. Annex A gives some idea of the relative rates of growth of IADB fields of support.

Once Canadian firms have demonstrated the capability to transfer skills and have acquired some experience abroad, their ability to supply specialist knowledge or to serve as a deal sweetener to firms engaged in large-scale capital works projects can be a significant contributor to the winning of international infrastructure projects. This represents a value-added feature provided by a soft infrastructure partner. To ensure success in this kind of strategic team approach the partners must be strong in areas such

as legal services, financial services, accounting and management consulting.

5.0 QUESTIONS FOR DISCUSSION

A number of questions arise as a result of this brief exploration of international soft infrastructure development. A working definition of soft infrastructure has been offered, its roots in the knowledge-based economy examined, its perceived role in international development reviewed and some Canadian experience cited. The central issue of how Canadian firms can capture a greater share of the action in international infrastructure markets needs to be addressed. Below are some areas which TTCSICP might wish to address:

Demand Side

An opportunity scan of potential soft infrastructure markets needs to be prepared for the TTCSICP in order that its members can make more informed decisions concerning trade opportunities. It will be important to determine:

- Which countries or regions promise the most return for effort?
- Which countries or regions should be targeted by government staff in support of this effort?
- Are there specific sub-sectors which should be addressed in specific countries or regions?
- Should there be a focus on specific projects, e.g., access to the Guatemalan/Honduran Social Investment Relief Fund?
- What methods/processes should be used to acquire detailed information on IFI-related soft infrastructure projects? For identifying PPI-related project development opportunities?
- What information is required for the project identification/assessment exercise?
- What are the sources of business intelligence?

Supply Side

- How do Canadian firms organize to win a greater share of international soft infrastructure projects?
- What forms of collaboration should be encouraged? What kinds of firms ought to participate?

- What synergies can be exploited to capture more of the total (hard and soft aspects) potential of infrastructure project development? How do Canadian firms organize to accomplish this?

- Should the government, in cooperation with the private sector, develop an inventory and searchable database that would allow firms to:

  (a) identify Canadian firms with the appropriate experience and know-how;

  (b) find potential candidates for partnerships, joint ventures and other types of alliances; and

  (c) identify potential projects that would be of interest to the firms?

- How can Canada promote government/private sector partnerships in the international marketing of public sector expertise and know-how related to capacity building and soft infrastructure development?

These are just some of the questions that need to be addressed in order that TTCSICP might efficiently pursue a course of action that leads us to achieving increased trade results in international soft infrastructure.

ANNEX A

DISTRIBUTION OF INTER-AMERICAN DEVELOPMENT BANK LOANS

(In millions of U.S. dollars)

Sector	1997	%	1961-97	%
Productive Sectors				
Agriculture and Fisheries	$ 157	2.6	$ 12,145	14.5
Industry, Mining and Tourism	1	0.0	7,527	9.0
Science and Technology	0	0.0	1,282	1.5
Physical Infrastructure				
Energy	1,040	17.3	15,113	18.0
Transportation and Communications	959	15.9	11,210	13.3
Social Sectors				
Sanitation	129	2.1	7,427	8.8
Urban Development	677	11.3	5,254	6.3
Education	613	10.2	3,518	4.2
Social Investment	792	13.2	3,572	4.3
Health	119	2.0	1,562	1.9
Environment	255	4.2	1,398	1.7
Microenterprise	20	0.3	227	0.3
Other				
Reform and Modernization of the State	798	13.3	9,902	11.8
Credit and Preinvestment	432	7.2	2,365	2.8
Export Financing	25	0.4	1,508	1.8
TOTAL	**$ 6,017**	100.0	**$ 84,010**	100.0

Source: Annual Report 1997, IADB

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